

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**TENTATIVE ORDER NO. R2-2005-xxxx
NPDES PERMIT NO. CA0038440**

**EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
WET WEATHER FACILITIES
ALAMEDA and CONTRA COSTA COUNTIES**

Adoption Date: September 21, 2005
Effective Date: October 1, 2005

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ORDER NO. R2-2005-xxxx
NPDES PERMIT NO. CA0038440**

REISSUING WASTE DISCHARGE REQUIREMENTS FOR:

**EAST BAY MUNICIPAL UTILITY DISTRICT
SPECIAL DISTRICT NO. 1
WET WEATHER FACILITIES (WWFs)
ALAMEDA AND CONTRA COSTA COUNTIES**

FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region, hereinafter called the Board, finds that:

1. *Discharger and Permit Application.* East Bay Municipal Utility District, Special District No. 1 (hereafter the Discharger) has applied to the Board for reissuance of waste discharge requirements and a permit to discharge treated wastewater to waters of the State and the United States under the National Pollutant Discharge Elimination System (NPDES).

Purpose of Order

2. This NPDES permit regulates the intermittent discharge of treated effluents from the Point Isabel, San Antonio Creek and Oakport WWFs. The effluent from the Point Isabel wet-weather treatment facility discharges to Richmond Inner Harbor, part of central San Francisco Bay at latitude 37°53'43"N and longitude 122°19'24"W (outfall E-001 for the purposes of this order). The effluent from the San Antonio Creek wet-weather treatment facility discharges to Oakland Inner Harbor, part of lower San Francisco Bay, at latitude 37°47'30"N and longitude 122°15'44"W (outfall E-002 for the purposes of this order). The effluent from the Oakport wet-weather treatment facility discharges to East Creek Slough at latitude 37°45'39"N and longitude 122°12'52"W about 700 feet upstream of lower San Francisco Bay (outfall E-003 for the purposes of this order) (See attached Figure 1 for wet-weather facility and outfall locations). The Waste Discharge Requirements in Order No. 98-005, adopted by the Board on January 21, 1998, previously governed this discharge. This Order rescinds the requirements of Order No. 98-005.
3. The U.S. EPA and the Board have classified discharges from these facilities as minor discharges.

Facility Description

4. *General.* The Discharger serves nine (9) cities and communities in the East Bay area with a population of approximately 650,000. The nine (9) cities and communities (East Bay Communities) include the Cities of Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont and Stege Sanitary District (El Cerrito, Kensington and part of Richmond). Each of the cities and Stege Sanitary District owns and operates its own wastewater collection system, which delivers wastewater to the Discharger's interceptor. The interceptor transports wastewater to the Discharger's year round main wastewater treatment plant (main treatment plant). The main treatment plant provides secondary

treatment. The treated wastewater is discharged through a mile long outfall to the San Francisco Bay near the San Francisco-Oakland Bay Bridge (Bay Bridge). The year-round discharge from the main treatment plant is regulated under a separate permit (NPDES Permit No. CA0037702).

5. *Main wastewater treatment plant.* The main treatment plant has an average dry weather flow design capacity of 120 million gallons per day (mgd). During wet weather conditions, the main treatment plant can provide partial secondary treatment up to 325 mgd; of which, approximately 157 mgd of wastewater receive primary treatment and up to 168 mgd receive secondary treatment. Additionally, the main treatment plant has one 11-million-gallon wet weather storage basin. The main treatment plant presently discharges an annual average daily flow of 79.6 mgd.
6. *Interceptor system (see attached Figure 1).* The Discharger owns and operates its interceptor system, which includes a 29-mile long North and South interceptor, Adeline Interceptor, South Foothill Interceptor, and Alameda Interceptor. The interceptor has a hydraulic capacity of 760 mgd. The interceptor system also includes 15 pump stations, five (5) overflow structures, three (3) WWFs and a million-gallon wet weather storage basin along the Alameda Interceptor.
7. *Wet weather overflow structures.* The Discharger's interceptor system includes 5 wet weather overflow structures. Historically, there were 7 overflow structures, two of which have been removed and replaced by three WWFs during the implementation of the Discharger's Wet Weather Program. Discharges of untreated sewage from the remaining 5 overflow structures may occur as a result of inflow and infiltration (I/I) during winter storm events that are greater than a 5-year storm event (as defined in finding 12 below, with a 13-year return rate). Locations of the remaining 5 overflow structures are: Oakland Inner Harbor at Alice Street, Oakland Inner Harbor at Webster Street, Elmhurst Creek, San Leandro Creek and Temescal Creek. During the past 10 years, there was only one overflow from one of these structures, during the 1998 El Nino conditions.
8. *WWFs.* Items a, b and c below provide descriptions of each of the three WWFs. These WWFs were designed and constructed based on Best Conventional Pollution Control Technology and Best Available Technology Economically Achievable ("BCT/BAT") available in 1980s. According to the studies and analysis conducted by the Discharger in 1980s, the BCT/BAT is to provide primary treatment.
 - a. Point Isabel WWF. The Point Isabel WWF is located at 2755 Point Isabel Street, Richmond. It was constructed in 1993 and has a design capacity of 100 million gallons per day (mgd). The Point Isabel WWF provides treatment to wastewaters diverted from the North Interceptor during peak wet weather flow conditions. The technology consists of coarse screens, bar screens, grit chambers, and sedimentation/disinfection basins. Screenings are disposed to landfill; grit and sludge are returned to the interceptor. The effluent is discharged through a submerged diffuser about 300 feet offshore at depth of 8 feet below mean low tide line to Richmond Inner Harbor, part of central San Francisco Bay.
 - b. San Antonio Creek WWF. The San Antonio Creek WWF is located at 225 5th Avenue, Oakland. It was constructed in 1996 and has a design capacity of 51 mgd. The San Antonio Creek WWF provides treatment to wastewaters diverted from the middle portion of the South Interceptor during peak wet weather flow conditions. The technology consists of grit removal, fine screening, and disinfection. Both screenings and grit are returned to the interceptor. The effluent is discharged to Oakland Inner Harbor, part of lower San Francisco Bay.

- c. Oakport WWF. The Oakport WWF is located at 5597 Oakport Street, Oakland. It was constructed in 1990 and has a design capacity of 158 mgd. The Oakport WWF provides to wastewaters diverted from the south portion of the South Interceptor. The technology consists of course screens and sedimentation/disinfection basins. Both screenings and sludge are returned to the interceptor. The effluent is discharged to East Creek Slough, which flows to Oakland Inner Harbor, part of lower San Francisco Bay.

History and Background

9. *East Bay Inflow and Infiltration Correction Program (I/ICP)*. Because the East Bay Communities' sewers are connected to the Discharger's interceptors, excessive I/I from the East Bay Communities' collection systems can force the Discharger's interceptors to overflow untreated wastewater through the seven (7) designed overflow structures in the interceptor system. The East Bay Communities and the Discharger initiated a 6-year East Bay I/I Study in 1980. The I/I Study outlined recommendations for a sewer improvement program called the East Bay I/ICP. Schedules to complete the I/ICP were developed for each member of the East Bay Communities. The East Bay Communities and the Discharger started implementing the East Bay I/ICP in 1987. Since then, the East Bay Communities have eliminated all known cross connections between sewer and storm drain systems, and 113 out of 115 sewer overflow points identified in the I/I Study as high threats to public health.
10. *Cost analysis of sewer rehabilitation program*. In the 1980s, the East Bay Communities performed a cost analysis during the I/I Study to determine the cost-effective level of I/I elimination and system rehabilitation. The cost-effective level of rehabilitation involves balancing the cost of rehabilitation of the East Bay Communities' sewer systems and the cost for increasing the capacity of the Discharger's interceptor system and wastewater treatment facilities. In the early 1980s, the Discharger also performed a sensitivity analysis to study cost effects of various levels of rehabilitation on treatment alternatives for wet weather flow. Cost-Effective Ratios (C-E-Ratio) for various drainage basins were calculated. A C-E Ratio greater than one (1) indicates that I/I rehabilitation is cost effective. The analysis was performed by using a computer program supported by the Corps of Engineers Hydrologic Engineering Center, called STORM. This analysis derived a regional least-cost solution, which included both East Bay Communities' sewer rehabilitation cost and transportation/treatment cost by the Discharger. The study results were described in the Wet Weather Facilities Update, dated May 29, 1985. The Study concluded that the most cost effective solution was to rehabilitate those cost effective elements of the communities' collection systems, provide relief sewers in the communities' systems, increase interceptor hydraulic capacity, and construct storage basins to handle wet weather flows up to a 5-year storm event.
11. *Design goal of East Bay I/ICP*. The design goal of East Bay I/ICP is to eliminate overflows from the East Bay Communities' collection systems and the Discharger's interceptor unless the rainfall exceeds a 5-year design storm event. Overflows may continue to occur for events less than the 5-year design storm until the East Bay Communities complete the I/ICP. However, the occurrence of overflows are expected to decrease as more of the East Bay I/ICP projects are completed.
12. *5-year Design Storm Event Definition*. The 5-year design storm event is a storm event that meets the following criteria: a 6-hour duration, and a maximum 1-hour rainfall intensity of a storm with return period of five (5) years. The storm is assumed to occur during saturated soil conditions, and to coincide with the peak 3-hour ultimate Base Wastewater Flow (BWF) condition. BWF consists of domestic wastewater flow from residential, commercial, and institutional sources plus industrial wastewater. BWF specifically excludes infiltration and inflow (I/I) from groundwater or storm water. Due to these conservative assumptions, the Wet Weather Facilities Pre-design Report concluded that the estimated peak flow produced by this event has a return period of approximately

13 years. The peak I/I flow from a 5-year storm was selected as the basis of design for the treatment level intended to protect beneficial uses as defined by the San Francisco Bay Basin Plan (Basin Plan), Maintenance Level C. Maintenance Level C requires secondary treatment to the half-year recurrence interval, primary treatment to the 5-year recurrence interval, and above the 5-year interval, overflows are allowed.

13. *EBMUD Wet Weather Program.* In conjunction with the I/I Study, the Discharger conducted its own wet weather program planning from 1975 to 1987, and developed a comprehensive East Bay Wet Weather Program. This East Bay Wet Weather Program combined the results of the I/I Studies and the EBMUD facility planning and developed a cohesive approach to reducing sanitary sewer overflows in the East Bay. The Discharger started implementing its component of the East Bay Wet Weather Program in 1987. Since then, the Discharger has spent about \$310 million in capital on the East Bay Wet Weather Program and annual operating costs of approximately \$3 million. The Discharger has constructed three WWFs and two wet weather interceptors; made improvements at its Main Treatment Plant, system storage areas and pumping facilities; and has eliminated two of the seven designed wet weather overflow structures.

14. *WWFs Permitting Background:*

- a. Pre-1986 permitting background. The Board first issued an NPDES permit to the Discharger in 1976 for the wet weather discharges from overflow structures along the interceptor. The 1976 permit required the Discharger to eliminate untreated overflows from its interceptors, identify various zones along shoreline of San Francisco Bay based on beneficial uses, and establish level of treatment for wet weather overflows. The 1976 permit was reissued in 1984. In addition to the requirement of elimination of wet weather overflows, the 1984 permit prescribed secondary limits for conventional pollutants and toxic limits for over 22 priority pollutants for overflows from all seven (7) overflow structures.
- b. U.S. EPA 1986 letter. By letter dated June 3, 1986, Board staff asked U.S. EPA whether overflows of sanitary wastes from collection systems are subject to secondary treatment requirements. U.S. EPA Region IX determined in its June 18, 1986, letter that the Discharger's wet weather overflow structures are not Publicly Owned Treatment Works (POTWs), and are therefore not subject to secondary treatment requirements pursuant to 40 CFR 122.2.

Based on this determination, when the 1984 permit was reissued in 1987 (Order No. 87-18), the secondary treatment limits from the 1984 permit were replaced with technology-based limits using Best Conventional Pollution Control Technology and Best Available Technology Economically Achievable ("BCT/BAT")

- c. Post-1986 construction and permitting.
 - (1) *Construction of three WWFs.* In reliance on U.S. EPA's June 18, 1986 letter and the 1987 permit, the Discharger – with the participation and approval of U.S. EPA and the Board – spent \$310 million constructing three (3) WWFs discussed below. The construction of WWFs was completed in 1998. These WWFs have significantly reduced the frequency and impact of wet weather overflows.
 - (2) *Subsequent permits.* The 1987 permit was reissued in 1992 and 1998 with no significant change to the requirements and effluent limits.

(3) *2005 permit.* As noted above, the June 18, 1986 letter concludes that "EBMUD's wet weather overflow structures are not POTW's" and, therefore, not subject to secondary treatment limitations. During this permit's reissuance, however, U.S. EPA revisited its 1986 conclusion. In its letter of September 7, 2004, U.S. EPA states that its "...conclusions made in the 1986 letter no longer reflect EPA's position, and any releases from the collection system and discharges from the wastewater treatment plant must meet secondary treatment requirements." U.S. EPA further notes in this letter that "EPA supports the implementation of the investigations, studies, and activities contained in the [Regional Water Board's] tentative time schedule order ..., [and] are hopeful that these studies and activities will provide ways for the Discharger to significantly reduce the discharge of pollutants to the Bay." In fact, such investigations, studies and activities are exactly the same requirements that would be imposed on the Discharger in order for it to be able to meet secondary treatment standards. Accordingly, whether secondary treatment standards apply to the WWFs is an issue without a practical difference in terms of requirements for this permit term and need not be resolved at this point. Given the foregoing and recognizing the hundreds of millions of dollars already spent by the Discharger in reliance of U.S. EPA's 1986 letter, this permit, along with the associated Time Schedule Order, continues to impose BAT/BCT requirements and contains requirements to enable the Discharger to reduce pollutant loads and ensure long-term compliance with all applicable standards.

Discharge Description

15. *Discharge flow and frequency.* Tables 1 through 3 summarize discharge frequency and discharge volume from the three WWFs. The Point Isabel WWF has the highest discharge, followed by Oakport and San Antonio Creek WWFs. The Oakport WWF has the highest discharge volume, followed by Point Isabel and San Antonio WWFs. The long-term design goal for these three WWFs is to achieve no more than ten (10) discharges per year per discharge location for a total of no more than 100 million gallons per year. As shown in Table 2 below, the annual discharge volumes exceed the long-term design goal of 100 million gallons per year. This is due to high I/I from the East Bay Communities' sewer systems. The discharge volume is expected to decrease after the East Bay Communities complete East Bay I/ICP in 2017.

Table 1 Discharge Frequency from 1998 to 2003 (Number of discharges per year per facility)

Facility	Targeted Discharge Frequency	Actual Discharge Frequency
Point Isabel	10	8.6
San Antonio	10	2
Oakport	10	7.2

Table 2 Total Discharge Volume from 1998 to 2003
 (Total volume discharged per season)

Season	Targeted Discharge Volume, MG	Actual Discharge Volume, MG
Winter of 1998-1999	100	236
Winter of 1999-2000	100	549
Winter of 2000-2001	100	214
Winter of 2001-2002	100	320
Winter of 2002-2003	100	362

Table 3 Annual Discharge Volume from Each Facility from 1998 to 2003
 (Volume discharged per facility per year)

Facility	Season	Season total, MG	Volume of discharge events, MG		
			Minimum	Maximum	Average
Point Isabel	1998-1999	53.7	0.4	36	6.7
	1999-2000	161	2.2	111	23.0
	2000-2001	110	1.2	49.7	13.8
	2001-2002	167	0.9	76.8	15.2
	2002-2003	189.4	1.1	62.6	21
San Antonio	1998-1999	3.8	3.8	3.8	3.8
	1999-2000	53.5	21	32.5	26.8
	2000-2001	0	0	0	0
	2001-2002	8.1	2.5	3	2.7
	2002-2003	18.5	0.7	11.7	4.6
Oakport	1998-1999	178	0.7	60	29.7
	1999-2000	334	10	128	55.7
	2000-2001	104	3	59	17.3
	2001-2002	145	1	36	13.2
	2002-2003	154	1	51	19.3

16. *Discharge effluent qualities for conventional pollutants.* The three WWFs provide primary treatment to wet weather flows. Due to severe I/I in the Communities' sewer systems, about 80% of wet weather flows are storm water. The BOD₅ and TSS removal efficiencies are about 20 to 40 percent. Tables 4 through 6 summarize conventional pollutant concentrations in the effluents from these WWFs.

- a. Point Isabel WWF. Table 4 summarizes effluent concentrations for conventional pollutants from Point Isabel WWF from 2001 through 2003.

Table 4 Effluent Conventional Pollutant Concentration Summary for Point Isabel WWF
 (From January 1, 2001 through December 31, 2003)

Conventional Pollutants	Data Count	Maximum	Minimum	Median	Mean
CBOD ₅ , mg/L	28	89	19	51	47
TSS, mg/L	30	100	23	37	46
Oil & Grease, mg/L	28	24	U3.9	13	14
Total Coliform, MPN/100 ml	41	12	<2	2	3
Fecal Coliform, MPN/100 ml	41	2	<2	<2	2

U = Analyte not detected.

- b. San Antonio Creek wet-weather treatment facility. Table 5 summarizes effluent concentrations for conventional pollutants from San Antonio Creek WWF from 2001 through 2003.

Table 5 Effluent Conventional Pollutant Concentration Summary for San Antonio Creek WWF (From January 1, 2001 through December 31, 2003)

Conventional Pollutants	Data Count	Maximum	Minimum	Median	Mean
CBOD ₅ , mg/L	8	70	14	56	47
TSS, mg/L	8	180	58	107	113
Oil & Grease, mg/L	8	24	U4.0	6.8	9.6
Total Coliform, MPN/100 ml	10	1300	7	140	334
Fecal Coliform, MPN/100 ml	10	110	<2	13	25

U = Analyte not detected.

- c. Oakport wet-weather treatment facility. Table 6 summarizes effluent concentrations for conventional pollutants from Point Isabel WWF from 2001 through 2003.

Table 6 Effluent Conventional Pollutant Concentration Summary for Oakport WWF (From January 1, 2001 through December 31, 2003)

Conventional Pollutants	Data Count	Maximum	Minimum	Median	Mean
CBOD ₅ , mg/L	23	220	25	77	93
TSS, mg/L	23	160	36	69	71
Oil & Grease, mg/L	24	37	U3.3	18	18
Total Coliform, MPN/100 ml	43	2200	2	4	101
Fecal Coliform, MPN/100 ml	43	30	2	2	3

U = Analyte not detected.

Applicable Plans, Policies and Regulations

Basin Plan

17. The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on January 21, 2004. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 22, 2004, and October 4, 2004, respectively, and approved by the U.S. Environmental Protection Agency, Region IX on January 5, 2005. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. The Basin Plan also prescribes, in Chapter 4 and Table 4-8, a Conceptual Approach to controlling wet weather overflows of wastewater, including the designation of alternative levels of maintenance and guidance for the design of overflow discharge structures. This Order is in compliance with the Basin Plan.

Beneficial Uses

18. Discharges from Point Isabel and San Antonio Creek WWFs enter central and lower San Francisco. Discharge from Oakport WWF enters East Creek Slough at its confluence with lower San Francisco Bay. It is therefore appropriate to apply the Basin Plan's tributary rule in determining the beneficial uses of East Creek Slough, by applying designated uses for lower San Francisco Bay. Common beneficial uses for central and lower San Francisco Bay, as identified in the Basin Plan, are:
- Commercial and sport fishing
 - Estuarine habitat
 - Industrial service supply

- d. Fish migration
- e. Navigation
- f. Preservation of rare and endangered species
- g. Water contact and non-contact recreation
- h. Shellfish harvesting
- i. Fish spawning
- j. Wildlife habitat

In addition to the above beneficial uses, central San Francisco has additional beneficial use for water for industrial activities.

19. Exception to Basin Plan Prohibition No. 1

The Basin Plan contains a prohibition against discharge of any wastewater, which has particular characteristics of concern to beneficial uses, at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1 or into any non-tidal water, dead-end slough, similar confined waters, or immediate tributaries thereof (Prohibition 1 in Basin Plan Table 4-1). The Basin Plan also gives exceptions to this prohibition if (1) an inordinate burden would be placed on the Discharger relative to beneficial uses provided, and (2) an equivalent level of environmental protection can be achieved by alternate means.

20. Discharges from these WWFs do not achieve a minimum initial dilution of 10:1. In issuing the previous Order, the Water Board granted the Discharger an exception for this prohibition because requiring achievement of 10:1 dilution would have placed an inordinate burden on the Discharger with minimum environmental benefit achieved. The previous permit required the Discharger to conduct an environmental enhancement project to provide environmental benefits to San Francisco Bay. The environmental enhancement projects completed under this requirement include design, printing and distribution of K-1 and middle school curriculums on water recycling; and development of recycled water irrigation customer training guidebooks and videos. The Discharger originally committed to spend \$100,000, but reportedly spent approximately \$200,000 on these projects.

21. For this Order, the Water Board determines that the exception from the Discharge Prohibition No. 1 continues to be appropriate at this time. In support of granting this exception, this Order directs the Discharger to submit a proposed Interim Environmental Enhancement Project Work Plan to the Water Board within six months of the effective date of this Permit that describes in detail a proposed Interim Environmental Enhancement Project ("Project") that will reduce pollutant loading to San Francisco Bay during the next five years. The Discharger should spend a sufficient amount on the Project(s) to ensure that it will meet the goal of substantial pollutant reduction and document the reduction. The Discharger should consider spending no less than the cost of the projects for the previous permit (i.e., \$200,000). The Board directs the Executive Officer to seek and duly to consider public comment on the proposed Project(s) in approving the Work Plan and Project.

State Implementation Policy (SIP)

22. The State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Policy or SIP) on March 2, 2000, and the Office of Administrative Law (OAL) approved the SIP on April 28, 2000. The State Board also amended the SIP on February 24, 2005 (approval by OAL still pending as of August 1, 2005). The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the Water Code) and the federal Clean Water Act. The SIP establishes implementation provisions for priority pollutant criteria promulgated by the U.S.

EPA through the National Toxics Rule (NTR) and California Toxics Rule (CTR), and for priority pollutant objectives established by the Regional Water Boards in their water quality control plans (Basin Plans). The SIP also establishes monitoring requirements for 2,3,7,8-TCDD equivalents, chronic toxicity control provisions, and Pollutant Minimization Programs.

23. The SIP provides for exceptions where the "... watersheds differ sufficiently from statewide conditions and those differences cannot be addressed through other provisions ..." of the SIP. The Discharger has stated its intent to apply to the State Board for mass offsets through SIP exceptions for toxic pollutants in the discharges that do not immediately comply with water quality standards. This Board adopted a Time Schedule Order No. R2-2005-xxx (TSO) concurrent with this Permit that, among other tasks, establishes a strategy leading towards an application for SIP exceptions. Once these necessary studies are completed and if the Board agrees it is justified, the Board will support the Discharger's efforts for mass offsets through SIP exceptions. However, until the State Board makes a determination and obtains U.S. EPA's concurrence, this Permit must implement the provisions of the SIP. Because the process for granting an exception may be lengthy, the Board encourages the Discharger to finish the necessary studies and submit a complete application to State Board in a timely manner so that any determinations by the State Board will be available by the time of the next permit reissuance.

California Toxics Rule (CTR)

24. On May 18, 2000, U.S. EPA published the *Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California* (Federal Register, Volume 65, Number 97, 18 May 2000). These standards are generally referred to as the CTR. The CTR specified water quality criteria (WQC) for numerous pollutants, of which some are applicable to the Discharger's effluent discharges.

Other Regulatory Bases

25. On March 30, 2000, U.S. EPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for Clean Water Act (CWA) purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under U.S. EPA's new regulation (also known as the Alaska rule), new and revised standards submitted to U.S. EPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by U.S. EPA.
26. WQOs/WQC and effluent limits in this permit are based on the SIP; the plans, policies and WQOs and criteria of the Basin Plan; California Toxics Rule (Federal Register Volume 65, 97); Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136) and Best Professional Judgment (BPJ) as defined in the Basin Plan. Where numeric effluent limits have not been established or updated in the Basin Plan, 40 CFR 122.44(d) specifies that water quality based effluent limits (WQBELs) may be set based on U.S. EPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative WQC to fully protect designated beneficial uses. Discussion of the specific bases and rationale for effluent limits are given in the associated Fact Sheet for this Permit, which is incorporated as part of this Order.

Applicable Water Quality Objectives/Criteria (WQO/WQC)

27. The WQOs and WQCs applicable to the receiving waters for this discharge are from the Basin Plan, the CTR, and the NTR.

- a. The Basin Plan specifies numeric WQOs for 10 priority toxic pollutants, as well as narrative WQOs for toxicity and bioaccumulation in order to protect beneficial uses. The pollutants for which the Basin Plan specifies numeric objectives are arsenic, cadmium, chromium (VI), copper in freshwater, lead, mercury, nickel, silver, zinc, and cyanide (see also c. below). The narrative toxicity objective states in part “[a]ll waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.” The bioaccumulation objective states in part “[c]ontrollable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life.”
- b. The CTR specifies numeric aquatic life criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries, except that where the Basin Plan’s Tables 3-3 and 3-4 specify numeric objectives for certain priority toxic pollutants, the Basin Plan’s numeric objectives apply over the CTR (except in the South Bay, south of the Dumbarton Bridge).
- c. The NTR established numeric aquatic life criteria for selenium, numeric aquatic life and human health criteria for cyanide, and numeric human health criteria for 34 toxic organic pollutants for waters of San Francisco Bay upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. This includes the receiving waters for this Discharger.

Basin Plan Receiving Water Salinity Policy

28. The Basin Plan states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water shall be considered in determining the applicable WQC. Freshwater criteria shall apply to discharges to waters with salinities equal to or less than one ppt at least 95 percent of the time. Saltwater criteria shall apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the criteria shall be the lower of the salt or freshwater criteria, (the latter calculated based on ambient hardness), for each substance. In applying CTR criteria, it is appropriate to use the CTR definition for determining if the receiving water is fresh, marine, or estuarine.

Receiving Water Salinity

29. The receiving water for the discharge from the Point Isabel WWF is central San Francisco Bay. Data collected during the winter wet season (January and February) by the Regional Monitoring Program (RMP) for Point Isabel Station (Station BC41) were used to determine the salinity of the receiving water. Based on the 1999 to 2001 salinity data for the above referenced station, the receiving water has salinities above 10 ppt more than 95% of the time. Therefore, the receiving water is characterized as saltwater.
30. The receiving water for the discharges from San Antonio Creek and Oakport WWFs is lower San Francisco Bay. Data collected during the winter wet season (January and February) by the RMP for Alameda Station (Station BB70) were used to determine the salinity of the receiving water. Based on the 1999 to 2001 salinity data for the above referenced station, the receiving water has salinities above 10 ppt more than 95% of the time. Therefore, the receiving water is characterized as saltwater.

Reasonable Potential Analysis (RPA)

31. As specified in 40 CFR 122.44(d) (1) (i), permits are required to include Water Quality Based Effluent Limits (WQBELs) for all pollutants “which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an

excursion above any State water quality standard.” Using the method prescribed in Section 1.3 of the SIP, Board staff has analyzed the effluent data to determine if the discharge has a reasonable potential to cause or contribute to an excursion above a State water quality standard (“Reasonable Potential Analysis” or “RPA”). For all parameters that have reasonable potential, WQBELs are required. The RPA compares the effluent data with numeric and narrative WQOs in the Basin Plan and numeric WQC from the U.S. EPA, the NTR, and the CTR.

32. *RPA Methodology.* The method for determining reasonable potential involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent, based on effluent concentration data. The RPA for all constituents is based on zero dilution, according to section 1.3 of the SIP. There are three triggers in determining reasonable potential.
- a. The first trigger is activated when the MEC is greater than or equal to the lowest applicable WQO/WQC, which has been adjusted for pH, hardness (assumed in this permit analysis at 300 mg/L), and translator data, if appropriate. An MEC that is greater than or equal to the (adjusted) WQO/WQC means that there is reasonable potential for that constituent to cause or contribute to an excursion above the WQO/WQC and a WQBEL is required. (Is the $MEC \geq WQO/WQC$?)
 - b. The second trigger is activated if the observed maximum ambient background concentration (B) is greater than the adjusted WQO/WQC and the MEC is less than the adjusted WQO/WQC or the pollutant was not detected in any of the effluent samples and all of the detection levels are greater than or equal to the adjusted WQO/WQC. If B is greater than the adjusted WQO/WQC, then a WQBEL is required. (Is $B > WQO/WQC$?)
 - c. The third trigger is activated after a review of other information determines that a WQBEL is required even though both MEC and B are less than the WQO/WQC. A limit is only required under certain circumstances to protect beneficial uses.
33. *Effluent and Receiving Water Ambient Background Data used in Reasonable Potential Analysis.* Effluent data used in the reasonable potential analysis are from the Discharger’s self-monitoring data from October 2000 to January 2004, including effluent data obtained under the requirements of the Water Board August 6, 2001, letter. Due to color interference of the test method used for chromium IV, total chromium data are used in the RPA and calculation of interim and final WQBELs. The receiving waters for the discharges regulated by this Order are the waters of central and lower San Francisco Bay. Data from the Regional Monitoring Program (RMP) for Yerba Buena Station (Station BC10) were used as ambient background concentrations. Salinity data obtained in January and February of 1994 through 2001 from RMP Point Isabel Station (Station BC41) is used for discharges from the Point Isabel WWF. Salinity data obtained in January and February of 1994 through 2001 from RMP Alameda Station (Station BB70) is used for discharges from the San Antonio Creek and Oakport WWFs.
34. *Summary of RPA Data and Results.* Tables 7 through 10 summarize the constituents that have been found to have reasonable potential to cause or contribute to an excursion above water quality objectives (results of RPA). Constituents not listed in the tables below are found not to show reasonable potential to cause or contribute to an excursion above applicable water quality objectives.

Table 7. Reasonable Potential Analysis Summary for Point Isabel WWF

Toxic Pollutants	C (µg/L)	Basis	MEC (µg/L)	B (µg/L)	RP Basis
6. Copper	3.7	CTR	53	2.45	MEC>C
7. Lead	8.1	BP	18	0.8	MEC>C
8. Mercury	0.025	BP	0.3	0.0086	MEC>C
9. Nickel	8.2	BP	26	3.7	MEC>C
11. Silver	1.9	BP	20.3	0.0516	MEC>C
13. Zinc	81	BP	134	4.4	MEC>C
14. Cyanide	1	NTR	7	-	MEC>C
16. Dioxin TEQ	0.000000014	BP	0.00000197	0.000000071	MEC>C B>C
27. Dichlorobromomethane	46	CTR	52	-	MEC>C
108. 4,4-DDT	0.00059	CTR	0.011	0.000066	MEC>C
109. 4,4-DDE	0.00059	CTR	0.00097	0.000693	MEC>C B>C
110. 4,4-DDD	0.00084	CTR	0.0059	0.000313	MEC>C
111. Dieldrin	0.00014	CTR	0.0029	0.000264	MEC>C; B>C
115. Endrin	0.002	CTR	0.003	0.000036	MEC>C
118. Heptachlor Expoxide	0.00011	CTR	0.0057	0.000094	MEC>C

Notes: C: Criteria
 MEC: Maximum Effluent Concentration
 B: Background concentration
 RP: Reasonable potential

Table 8. Reasonable potential Analysis Summary for San Antonio Creek WWF

Toxic Pollutants	C (µg/L)	Basis	MEC (µg/L)	B (µg/L)	RP Basis
6. Copper	3.7	CTR	61	2.45	MEC>C
7. Lead	8.1	BP	36.1	0.8	MEC>C
8. Mercury	0.025	BP	0.46	0.0086	MEC>C
9. Nickel	8.2	BP	26	3.7	MEC>C
11. Silver	1.9	BP	23	0.0516	MEC>C
13. Zinc	81	BP	185	4.4	MEC>C
14. Cyanide	1	NTR	28	-	MEC>C
16. Dioxin TEQ	0.000000014	BP	0.00000274	0.000000071	MEC>C B>C
61. Benzo(a)pyrene	0.049	CTR	0.04	0.00029	MEC>C
73. Chrysene	0.049	CTR	0.066	0.0024	MEC>C
108. 4,4-DDT	0.00059	CTR	0.0037	0.000066	MEC>C
109. 4,4-DDE	0.00059	CTR	0.00097	0.000693	MEC>C B>C
111. Dieldrin	0.00014	CTR	0.00077	0.000264	MEC>C B>C

Notes: C: Criteria
 MEC: Maximum Effluent Concentration.
 B: Background concentration.
 RP: Reasonable potential.

Table 9. Reasonable potential Analysis Summary for Oakport WWF

Toxic Pollutants	C (µg/L)	Basis	MEC (µg/L)	B (µg/L)	RP Basis
6. Copper	3.7	CTR	86.2	2.45	MEC>C
7. Lead	8.15	BP	36.8	0.8	MEC>C
8. Mercury	0.025	BP	0.17	0.0086	MEC>C
9. Nickel	8.2	BP	22	3.7	MEC>C
11. Silver	1.9	BP	26.4	0.0516	MEC>C
13. Zinc	81	BP	216	4.4	MEC>C
14. Cyanide	1	NTR	11	-	MEC>C
16. Dioxin TEQ	0.000000014	BP	0.00000542	0.000000071	MEC>C B>C
38. Tetrachloroethylene	8.85	CTR	74	-	MEC>C
88. Hexachlorobenzene	0.00077	CTR	0.023	0.000022	MEC>C
108. 4,4-DDT	0.00059	CTR	0.0087	0.000066	MEC>C
109. 4,4-DDE	0.00059	CTR	0.00097	0.000693	MEC>C B>C
110. 4,4-DDD	0.00084	CTR	0.015	0.000313	MEC>C
111. Dieldrin	0.00014	CTR	0.022	0.000264	MEC>C; B>C

Notes: C: Criteria
 MEC: Maximum Effluent Concentration
 B: Background concentration
 RP: Reasonable potential

Requirement for Monitoring of Pollutants in Effluent and Receiving Water to Implement New Statewide Regulations and Policy

35. *Effluent monitoring.* On August 6, 2001, the Board sent a letter to all the permitted dischargers, pursuant to Section 13267 of the California Water Code requiring the submittal of effluent and receiving water data on priority pollutants. This formal request for technical information addressed the insufficient effluent and ambient background data, and the dioxin study. The Discharger has submitted monitoring data from winters of 2002 and 2003 based on the requirements in the August 6, 2001, letter. These data are included in the data set for RPA and for developing limits for toxic pollutants in this Order. The Self-Monitoring Program for this Order requires the Discharger to continue monitoring effluent from all three (3) WWFs for priority pollutants to obtain additional effluent data for the next permit reissuance.

Regional Monitoring Program

36. *Receiving water monitoring.* On April 15, 1992, the Board adopted Resolution No. 92-043 directing the Executive Officer to implement the RMP for the San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in this region, under authority of Section 13267 of California Water Code, to report on the water quality of the estuary. Permit holders, including the Discharger, responded to this request by participating in a collaborative effort, through the San Francisco Estuary Institute (formerly the Aquatic Habitat Institute). This effort has come to be known as the San Francisco Bay Regional Monitoring Program for Trace Substances. The Discharger is participating in the RMP through the requirements in the permit issued to its main treatment plant (NPDES No. CA0037702 in Order No. 01-072). The RMP involves collection of data on pollutants and toxicity in water, sediment and biota of the estuary. Annual reports from the RMP are referenced elsewhere in this Order.

Basis for Effluent Limits

General Basis

37. *Federal Water Pollution Control Act.* Effluent limits and toxic effluent standards are established pursuant to sections 301 through 305, and 307 of the Federal Water Pollution Control Act and amendments thereto are applicable to the discharges herein.

Technology Based Effluent Limits

38. According to 40 CFR Part 125.3, technology-based limits signify the minimum level of control that a discharger must attain for conventional pollutants. As described in Finding 14, the Board relied upon U.S. EPA's June 18, 1986, letter, and did not impose secondary treatment limits on the subject discharges. Instead, the Board established technology-based effluent limits based on Best Conventional Pollution Control Technology and Best Available Technology Economically Achievable, or BCT/BAT, in the previous permits (Order Nos. 87-18, 92-97 and 98-005). During the 1987-permit reissuance, the Board relied upon various factors identified in 40 CFR 125.3(d) in setting case-by-case based limits in the absence of U.S. EPA guidance or examples from other states. The following factors were analyzed in 1987 in determining BCT limits for conventional pollutants:

- a. Pollutant concentrations in the Discharger's existing overflows;
- b. Compliance with Basin Plan water quality standards;
- c. Alternative control technologies available;
- d. The performance of each technology based on
 - (1) Effluent limits attainable;
 - (2) Pollutant removal rates; and
 - (3) Per-unit cost of removal.
- e. Comparison of removal costs with those typical of secondary treatment plants.

Time Schedule Order

39. The technology based effluent limits in this Permit are the same as those prescribed in the previous orders, which were based on BCT/BAT (see Finding 14). However, these technology based effluent limits were determined based on treatment technologies available in 1987. Over the past 18 years, new technologies have been developed for treating intermittent wet weather flows and lateral infiltration controls, which were not available in 1987. This gives rise to the possibility that the Discharger's WWFs no longer comply with BCT/BAT requirements.

Additionally, the discharge has reasonable potential to cause or contribute to exceedances of water quality standards for toxics and as a result, the discharges from these facilities threaten to violate the receiving water limitation set forth in this Order. The Discharger has represented that it believes additional toxic pollutant mass reduction is possible. The Water Board finds that investigating where and how such reductions are possible is appropriate and necessary.

For these reasons, the Water Board is imposing a Time Schedule Order ("TSO"), concurrent with this Permit, requiring the Discharger to investigate, over the next 4.5 years, how best to reduce toxic pollutant loading to San Francisco Bay, to improve technology based performance for conventional pollutants, and to make progress toward compliance with applicable water quality objectives via

direct controls or offsets in the form of pollutant mass reductions into San Francisco Bay from other off-site sources. Some examples of other off-site source reductions are treatment of nuisance flows from storm drain systems during dry weather, treatment of storm water from the first storm events (“first flush”), and funding clean-up or closure of abandoned mines that would otherwise not be cleaned-up or closed. Specifically, the TSO requires the Discharger to:

- a. Investigate new treatment technologies that could be added to the facilities;
- b. Investigate a “one-system” permit model;
- c. Investigate offsetting reductions of toxic pollutants;
- d. Investigate additional wet-weather flow storage and transportation;
- e. Investigate regional infiltration and inflow (I/I) management and reduction; and,
- f. Investigate the application of various methods, eg: water effects ratios, site-specific translators, site-specific objectives, aggressive pretreatment, mixing zones and dilution credits, to achieve compliance.

Water Quality-Based Effluent Limits (WQBELs)

40. Toxic substances are regulated by WQBELs derived from water quality objectives listed in the Basin Plan Tables 3-3 and 3-4, the NTR, U.S. EPA recommended criteria, the CTR, the SIP, and/or BPJ. Reasonable potential is determined using the methodology outlined in the SIP. If the Discharger demonstrates that the final limits will be infeasible to meet and provides justification for a compliance schedule, then interim limits are established, with compliance schedules to achieve the final limits. Further details about the effluent limits are given in the associated Fact Sheet.
41. The Basin Plan allows substituting alternative bacteriological effluent limitations for total coliform limitations if the Discharger can demonstrate such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water. This Order contains a provision for an optional study for the Discharger to take effluent and receiving water samples to demonstrate appropriateness of such a substitution.

Interim Limits and Compliance Schedules

42. Interim limits in this Order are calculated by using the Discharger’s self-monitoring data from October 2000 to January 2004, including effluent data obtained under the requirements of the Board August 6, 2001, letter. However, there are only one or two detected values for organic pollutants in these data. The staff is unable to calculate the performance-based limits based on one or two data points. Therefore, this Order requires accelerated monitoring of toxic organic pollutants to monthly if data show concentrations above the applicable criteria. If the future monitoring results show consistent exceedance of WQOs, the Board will reopen this Order to include interim limits as necessary.
43. This Order establishes compliance schedules based on Sections 2.1 and 2.2 of the SIP for limits derived from CTR criteria or based on the Basin Plan for limits derived from the Basin Plan WQOs. If an existing Discharger cannot immediately comply with a new and more stringent effluent limit, the SIP and the Basin Plan authorize a compliance schedule in the permit. To qualify for a compliance schedule, both the SIP and the Basin Plan require that the Discharger demonstrate that it

is infeasible to achieve immediate compliance with the new limits. The SIP and the Basin Plan require that the following information be submitted to the Board to support a finding of infeasibility:

- a. Documentation that diligent efforts have been made to quantify pollutant levels in the discharge and sources of the pollutant in the waste stream, including the results of those efforts;
 - b. Documentation of source control and/or pollution minimization efforts currently under way or completed;
 - c. A proposed schedule for additional or future source control measures, pollutant minimization or waste treatment; and
 - d. A demonstration that the proposed schedule is as short as practicable.
44. On July 14, 2004, the Discharger submitted an infeasibility study. Based on the information in this report, the Board believes that the Discharger has fulfilled all of the above requirements and is eligible for a compliance schedule. In summary, the infeasibility analysis consisted of comparing the mean, 95th percentile and 99th percentile of the effluent data from Outfall E-2 (from winters of years 2000 through 2003) to the LTA (Long Term Average), AMEL (Average Monthly Effluent Limit), and MDEL (Maximum Daily Effluent Limit) calculated using SIP procedures. The result shows that mean, 95th or 99th percentiles of effluent data were greater than LTA, AMEL or MDEL, thus it is infeasible to achieve immediate compliance.
45. According to the Basin Plan (page 4-14, Compliance Schedule) or the SIP (Section 2.1, Compliance Schedule), if the Discharger demonstrates that it is infeasible to immediately comply with the WQBELs calculated according to Section 1.4 of the SIP, the permit should allow a compliance schedule to achieve such compliance. Therefore, this Order establishes a five-year compliance schedule for final limits based on CTR or NTR criteria (e.g., copper, and cyanide), and compliance schedule of January 1, 2015, for final limits based on the Basin Plan numeric objectives affected by the recent amendment (e.g., lead, nickel, silver and zinc). This provision has been construed to authorize compliance schedules for new interpretations of existing standards, such as the numeric water quality objectives specified in the Basin Plan, resulting in more stringent limits than those in the previous permit.
46. Until final WQBELs or WLAs are adopted, state and federal anti-backsliding and antidegradation policies, and the SIP, require that the Board include interim effluent limits. The interim effluent limits in this Order are based on the more stringent of performance based limits or limits from the previous Order.

Total Maximum Daily Loads (TMDLs) and Waste Load Allocations (WLAs)

47. On July 25, 2003, the U.S. EPA approved a revised list of impaired water bodies prepared by the State. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the federal Clean Water Act to identify specific water bodies where water quality standards are not expected to be met after implementation of technology-based effluent limits on point sources. Both central and lower San Francisco Bay are listed as an impaired water body. The central San Francisco Bay is impaired for Chlordane, DDT; Diazinon, Dieldrin, Dioxin and Furan compounds, Mercury, PCBs, Selenium and exotic species. The lower San Francisco Bay at Oakland Inner Harbor (Fruitvale site) is impaired for chlordane and chlordane sediment, DDT, diazinon, dieldrin, dioxin and furan compounds, mercury, PCBs, selenium and exotic species.
48. Based on the 303(d) list of pollutants impairing San Francisco Bay, the Board plans to adopt TMDLs for these pollutants no later than 2010, with the exception of dioxin and furan compounds. The Board defers development of the TMDL for dioxin and furan compounds to the U.S. EPA. Future

review of the 303(d) list for San Francisco Bay may result in revision of the schedules and/or provide schedules for other pollutants.

49. The TMDLs will establish WLAs and load allocations for point sources and non-point sources, respectively, and will result in achieving the water quality standards for the listed water body. The final effluent limits for pollutants with TMDLs and WLAs will be based on WLAs, which are derived from the TMDLs.

Source Control and Pollution Prevention

50. The Discharger has established a Pollution Prevention Program under the requirements specified by the Water in its NPDES permit for the Discharger's main treatment plant (CA0038702).

- a. Section 2.4.5 of the SIP specifies under what situations and for which priority pollutant(s) (i.e., reportable priority pollutants) the Discharger shall be required to conduct a Pollutant Minimization Program in accordance with Section 2.4.5.1.
- b. There may be some redundancy between the Pollution Prevention Program and the Pollutant Minimization Program requirements.
- c. Where the two programs' requirements overlap, the Discharger is allowed to continue/modify/expand its existing Pollution Prevention Program to satisfy the Pollutant Minimization Program requirements.
- d. For constituents identified under Effluent Limits, the Discharger will conduct appropriate source control or pollutant minimization measures that are consistent with its approved Pretreatment and Pollution Prevention Programs. For constituents with compliance schedules under this permit, the applicable source control/pollutant minimization requirements of SIP Section 2.1 will also apply.

Permit Reopener

51. This Order includes a reopener provision to allow numeric effluent limitations to be added or deleted for any constituent that exhibits or does not exhibit, respectively, reasonable potential. The Board will make this determination based on monitoring results required in this Order.

Antibacksliding and Antidegradation

52. *Antidegradation and Anti-backsliding.* The limits in this Order are in compliance with the Clean Water Act Section 402(o) prohibition against establishment of less stringent WQBELs for the following reasons:

- a. For impairing pollutants, the revised final limits will be in accordance with TMDLs and WLAs once they are established;
- b. For non-impairing pollutants, the final limitations are/will be consistent with current State WQOs/WQC.
- c. Antibacksliding does not apply to the interim limits established under previous Orders;
- d. If antibacksliding policies apply to interim limits under 402(o)(2)(c), a less stringent limit is necessary because of events over which the Discharger has no control and for which there is no reasonable available remedy, and/or new information is available that was not available during previous permit issuance.

CEQA Exemption and Public Hearing

53. *NPDES Permit.* This Order serves as an NPDES Permit, adoption of which is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code [California Environmental Quality Act (CEQA)] pursuant to Section 13389 of the California Water Code.
54. *Notification.* The Discharger and interested agencies and persons have been notified of the Water Board's intent to reissue requirements for the existing discharges and have been provided an opportunity to submit their written views and recommendations. Board staff prepared a Fact Sheet and Response to Comments, which are hereby incorporated by reference as part of this Order.
55. *Public Hearing.* The Board, in a public meeting, heard and considered all comments pertaining to the discharge.
56. During reissuance of this permit, members of the public expressed concerns that the Board would not act in a timely manner to reissue this permit in 5 years. Therefore, provided the Discharger has timely applied for permit reissuance, the Board directs its staff to expeditiously work on and prioritize reissuing the permit, and bring it before the Board prior to this permit's expiration date, if possible.

IT IS HEREBY ORDERED, pursuant to the provisions of Division 7 of the California Water Code, regulations, and plans and policies adopted thereunder, and to the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, that the Discharger shall comply with the following:

A. DISCHARGE PROHIBITIONS

1. Discharge of treated wastewater at a location or in a manner different from that described in this Order is prohibited.
2. Discharge of dry weather wastewater from the wet weather outfalls is prohibited.
3. Discharge to waters of the State is prohibited except as defined below:

The Discharger shall design, construct and operate its interceptor system and wet-weather treatment facilities to achieve a long-term average of no more than 10 discharges per year per discharge location, for a total of no more than 100 million gallons per year. The numerical design criteria in this prohibition are the long-term goals to be achieved after the East Bay Communities complete their I/ICP in 2017. These numerical criteria will not be used to determine compliance or non-compliance with this prohibition.

B. IMPLEMENTATION AND ENFORCEMENT OF PROHIBITION A.3

Compliance with Prohibition A.3 can be demonstrated by compliance with both of the following:

1. The April 1988 Wet Weather Facilities Operating and Control Plan, which is consistent with the following objectives:
 - a. Maximize the volume of wastewater delivered to the main treatment plant consistent with that plant's hydraulic and treatment capacities; and

- b. Assure that all wastewater entering the Discharger's interceptor receives treatment prior to discharge (at least floatables removal and disinfection/dechlorination).

2. Requirements in the Time Schedule Order No. R2-2005-xxxx.

C. EFFLUENT LIMITATIONS

1. Effluent limitations for conventional pollutants

Effluent discharged from Point Isabel, San Antonio Creek and Oakport wet-weather treatment facilities shall comply with the following limitations:

<u>Constituents</u>	<u>Units</u>	<u>Instantaneous Max.</u>	<u>Moving median of 5-consecutive sample</u>	<u>Any single sample</u>
Total Coliform Organisms ¹				
1. Point Isabel facility	MPN/100 ml		240	10,000
2. San Antonio Creek facility	MPN/100 ml		240	10,000
3. Oakport facility	MPN/100 ml		240	10,000
Chlorine Residual ²	mg/L	0.0		
pH, in pH units ³	Discharge must be within 6.5 to 8.5			

¹ The Discharger may propose a study to support the conversion to alternative bacteriological effluent limits.

² The chlorine residual requirement is defined as below the limit of detection defined in *Standard Methods for the Examination of Water and Wastewater*. The Discharger may elect to use a continuous on-line monitoring system(s) for measuring flows, chlorine and sodium bisulfate dosage, and concentration to prove that chlorine residual exceedances are false positives. If convincing evidence is provided, Board may conclude that these false positive chlorine residual exceedances are not violations of this permit limit.

³ If the Discharger continuously monitoring pH, the Discharger shall be in compliance with the pH limitation provided that both of the following conditions are satisfied: (1) The total time during which the pH values are outside the required range of 6.5 to 8.5 pH values shall not exceed 99% of the total duration of discharge during any calendar month; and (2) No individual excursion from the range of pH values shall exceed 60 minutes.

2. Toxic Substances

Effluent discharged from **Point Isabel** WWF shall comply with the following limitations:

Constituent	Unit	Interim Daily Max	Notes
Copper	µg/L	77	(1) (2)
Lead	µg/L	20	(1) (5)
Mercury	µg/L	0.40	(1) (3)(4)
Nickel	µg/L	32	(1) (5)
Silver	µg/L	20	(1) (5)
Zinc	µg/L	197	(1) (5)

Effluent discharged from **San Antonio Creek** WWF shall comply with the following limitations:

Constituent	Unit	Interim Daily Max	Notes
Copper	µg/L	94	(1) (2)
Lead	µg/L	60	(1) (5)
Mercury	µg/L	1.0	(1) (3)(4)
Nickel	µg/L	31	(1) (5)
Silver	µg/L	23	(1)5
Zinc	µg/L	228	(1) (5)

Effluent discharged from **Oakport** WWF shall comply with the following limitations:

Constituent	Unit	Interim Daily Max	Notes
Copper	µg/L	100	(1) (2)
Lead	µg/L	46	(1) 5
Mercury	µg/L	0.25	(1) (3) (4)
Nickel	µg/L	25	(1) 5
Silver	µg/L	26	(1) 5
Zinc	µg/L	269	(1) 5

Notes:

- (1) (a) Compliance with these limits is intended to be achieved through pretreatment and source control.
 - (b) All analyses shall be performed using current U.S. EPA methods. The Discharger is in violation of the limit if the discharge concentration exceeds the effluent limitation and the reported minimum level (ML) for the analysis.
 - (c) Limits apply to the average concentration of all samples collected during the averaging period (Daily = 24-hour period).
- (2) This interim limit shall remain in effect until May 18, 2010, or until the Board amends the limit based on site-specific objectives or the Waste Load Allocation in the TMDL. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.
- (3) This interim limit shall remain in effect until April 28, 2010, or until the Board amends the limit based on site-specific objectives or the Waste Load Allocation in the TMDL. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.
- (4) Mercury: Effluent mercury monitoring shall be performed by using ultra-clean sampling and analysis techniques or U.S. EPA method 245.2, with a minimum level of 0.002 µg/L or lower.
- (5) This interim limit shall remain in effect until January 1, 2015, or until the Board amends the limit based on site-specific objectives or the Waste Load Allocation in the TMDL. However, during the next permit reissuance, Board staff may re-evaluate the interim limits.

D. RECEIVING WATER LIMITATIONS

1. The discharges of waste shall not cause the following conditions to exist in waters of the State at any place:
 - a. Floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 - c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 - d. Visible floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. Toxic or other deleterious substances to be present in concentrations or quantities which will cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or which render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
2. The discharges shall not cause nuisance, or adversely affect the beneficial uses of the receiving water.
3. The discharges shall not cause the following limits to be violated in waters of the State at any one place within one foot of the water surface:
 - a. Dissolved Oxygen: 5.0 mg/L, minimum
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, then the discharges shall not cause further reduction in ambient dissolved oxygen concentrations.
 - b. Dissolved Sulfide: 0.1 mg/L, maximum
 - c. pH: The pH shall not be depressed below 6.5 nor raised above 8.5, nor caused to vary from normal ambient pH by more than 0.5 pH units.
 - d. Un-ionized Ammonia: 0.025 mg/L as N, annual median; and 0.4 mg/L as N, maximum.
 - e. Nutrients: Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
4. The discharges shall not cause a violation of any particular water quality standard for receiving waters adopted by the Board or the State Board as required by the Clean Water Act and regulations adopted there under. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

E. PROVISIONS

1. Time Schedule Order

The Discharger shall comply with all provisions and requirements in the Time Schedule Order No. R2-2005-xxxx (“TSO”) issued for the subject discharges in this Order.

2. Interim Environmental Enhancement Project

As a condition of the Board’s granting of an exception to the “less than 10:1” prohibition, the Discharger shall propose one or more environmental enhancement project(s), which will result in substantially reduced pollutant loading to San Francisco Bay. Specifically, within six months of the effective date of this Permit, the Discharger shall submit to the Board’s Executive Officer for approval a work plan for one or more Project(s). The Discharger shall include in the work plan a review of considered Project alternatives, with recommendations for Projects to be selected based on criteria that include water quality benefit, time-frame for implementation and project cost. The Discharger shall implement the environmental Project(s) upon the approval by the Board’s Executive Officer, and complete the Project by the timeline as approved by the Executive Officer.

The Discharger shall submit semi-annual progress reports, on the first of April and November of each year, to the Board documenting progress toward Project implementation, as well as (1) any revised workplan(s) necessitated by problems encountered in implementation and (2) a final report documenting Project completion. The final report shall be submitted within 90 days of Project completion. The progress reports must identify steps taken toward Project completion, the costs of Project implementation, and the environmental benefits obtained by the Project, including mass amount of pollutant loading reduction to San Francisco Bay achieved.

3. 5-Day Biological Oxygen Demand (BOD₅) and Total Suspended Solids (TSS) Removal Efficiency Study

The Discharger shall conduct a BOD₅ and TSS removal efficiency study at each of the three WWFs. The Study shall include sufficient BOD₅ and TSS monitoring data in order to confidently calculate BOD₅ and TSS removal efficiency at each WWF. The Discharger shall discuss the status of this study in its Annual Self-Monitoring Reports, and submit the completed study result with its NPDES renewal application for this Order.

4. SSO/TMDL Participation Requirement

The Discharger shall participate in the region-wide group effort to develop TMDLs or Site-Specific Objectives (SSOs) for copper, mercury, nickel, cyanide, dioxin TEQ, and chlorinated pesticides (for those with reasonable potential). By January 31 of each year, an update shall be submitted to the Board by the group to document progress made on development of TMDLs or SSOs. This submittal may be done as part of a collaborative effort with other dischargers.

5. Operation and Maintenance Manual

The Discharger shall review and update its Operation and Maintenance Manual annually or, in the event of significant facility or process changes, shortly after such change occur. The Discharger shall keep the manual at its facility and have it readily available to its employees and Board staff for inspection.

6. Pollutant Prevention and Minimization Program (PMP)

The Discharger shall continue to implement and improve its existing Pollution PMP in order to reduce pollutant loadings to the treatment plant and therefore to the receiving waters. Compliance with this provision can be demonstrated by showing compliance with Provision 6 of Order No. 01-072 for the Discharger's main treatment plant.

7. Optional Receiving Water Study on Alternate Bacteriological Limitations

To develop information on substituting alternate bacteriological effluent limitations for the existing total coliform limits, the Discharger may conduct a receiving water study to assess its appropriateness. Depending on the results of the final study, this Order may be amended to make such a substitution. Study tasks shall include:

- a. Develop a study plan, acceptable to the Executive Officer, to include selection and justification for an alternate bacteriological limit and tasks to be completed.
- b. Following approval by the Executive Officer, commence work in accordance with the study plan and time schedule.
- c. Submit a final report, acceptable to the Executive Officer, documenting results of the investigation.

8. Self-Monitoring Program

The Discharger shall comply with the Self-Monitoring Program (SMP) for this Order as adopted by the Board. The SMP may be amended by the Executive Officer pursuant to U.S. EPA regulations 40 CFR 122.62, 122.63, and 124.5.

9. Standard Provisions and Reporting Requirements

The Discharger shall comply with all applicable items of the Standard Provisions and Reporting Requirements for NPDES Surface Water Discharge Permits, August 1993 (attached), or any amendments thereafter. Where provisions or reporting requirements specified in this Order are different from equivalent or related provisions or reporting requirements given in 'Standard Provisions', the specifications of this Order shall apply.

10. Change in Control or Ownership

- a. In the event of any change in control or ownership of land or waste discharge facilities presently owned or controlled by the Discharger, the Discharger shall notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Board.
- b. To assume responsibility of and operations under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order (see Standard Provisions & Reporting Requirements, August 1993, Section E.4.). Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.

11. Order Reopener

The Board may modify or reopen this Order and Permit prior to its expiration date in any of the following circumstances:

- a. If present or future investigations demonstrate that the discharge(s) governed by this Order and Permit will or have a reasonable potential to cause or contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters;
- b. New or revised WQOs come into effect for the San Francisco Bay estuary and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this permit will be modified as necessary to reflect updated WQOs. Adoption of effluent limitations contained in this Order and Permit are not intended to restrict in any way future modifications based on legally adopted WQOs or as otherwise permitted under Federal regulations governing NPDES permit modifications; or
- c. The Discharger has successfully demonstrated that substitution of an alternate bacteriological effluent limit for total coliform will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.

12. Order Effective Date and Rescission of Previous Waste Discharge Requirements

The Discharger shall comply with all sections of this Order beginning on its effective date. Requirements prescribed by this Order supersede the requirements prescribed by Order No. 98-005; Order No. 98-005 is hereby rescinded upon the effective date of this Order.

13. NPDES Permit Effective Date

This Order shall serve as a National Pollutant Discharge Elimination System (NPDES) permit pursuant to Section 402 of the Clean Water Act or amendments thereto, and shall become effective on October 1, 2005, provided the U.S. EPA Regional Administrator has no objection. If the Regional Administrator objects to its issuance, the permit shall not become effective until such objection is withdrawn.

14. Order Expiration and Reapplication

- a. This Order expires on March 31, 2010.
- b. In accordance with Title 23, Chapter 3, Subchapter 9 of the California Administrative Code, the Discharger must file a report of waste discharge requirements no later than 180 days before the expiration date of this Order as application for reissue of this permit and waste discharge requirements. The application shall be accompanied by a summary of all available water quality data including conventional pollutant data from no less than the most recent three (3) years, and of toxic pollutant data no less than from the most recent five (5) years, in the discharge and receiving water. Additionally, the Discharger must include with the application the final results of any studies that may have bearing on the limits and requirements of the next permit. Such studies include, but are not limited to, dilution studies, translator studies, alternate bacteria indicator studies, and the conventional pollutant removal efficiency study required by this Order.

EBMUD, Wet Weather Permit - NPDES Permit No. CA0038440
Order No. R2-2005-xxxx

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on September 21, 2005.

Bruce H. Wolfe
Executive Officer

Attachments:

- A. Figure 1. EBMUD WWFs
- B. Self-Monitoring Program, Part B
- C. Fact Sheet

The following documents are part of this Order, but are not physically attached due to volume. They are available on the internet under downloadable documents at www.waterboards.ca.gov/sanfranciscobay :

- Part A (dated August 1993), not enclosed
- Standard Provisions and Reporting Requirements, August 1993
- Board Resolution No. 74-1

Attachment A

Figure 1: EBMUD WWFs

Attachment B

Self-Monitoring Program, Part B

Attachment C.

Fact Sheet